



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/696,183

10/29/2003

Cheng-Hwa Liu

252011-1740

6537

47390

7590

09/01/2009

THOMAS, KAYDEN, HORSTEMEYER & RISLEY LLP
600 GALLERIA PARKWAY, 15TH FLOOR
ATLANTA, GA 30339

EXAMINER

STERRETT, JONATHAN G

ART UNIT

PAPER NUMBER

3623

MAIL DATE

DELIVERY MODE

09/01/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/696,183	Applicant(s) LIU ET AL.	
	Examiner JONATHAN G. STERRETT	Art Unit 3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 13-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 13-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 30 May 2009 has been entered.

2. This Non-Final Office Action is responsive to the amendment of 30 May 2009. Currently **Claims 1-6 and 13-24** are pending in the application.

Response to Amendment

3. The 35 USC 101 rejections are withdrawn.

Response to Argument

The applicant's arguments have been fully considered but are not persuasive.

The applicant argues that Jenkins fails to teach forecast demand, and rather, that Jenkins ensures fulfillment of given demands, i.e. manufacturing orders, rather than actual forecasting. The applicant further alleges that Jenkins allocating current orders into the forecast really isn't forecasting at all, since Jenkins is not forecasting per se.

The examiner respectfully disagrees.

A forecast is an estimate or a prediction of something that is to occur in the future. In the context of manufacturing planning, a forecast is an estimate or prediction of what customer demand will be. The usual practice of forecasting in manufacturing planning is to use time periods into the future, where each time period has an associated production number (which Jenkins teaches - see para 31, adjusting time periods with customer orders).

The crux of the applicant's argument is that since Jenkins is adjusting a forecast, that Jenkin's teachings aren't really forecasting per se, but rather reallocating actual customer orders into a forecast schedule. What Jenkins illustrates, is the known process of adjusting a forecast based on improved information (i.e. in this case actual

Art Unit: 3623

orders). The result of Jenkins teachings does not do away with the future forecast, but rather allocates production from forecast demand to actual demand, thus improving it. Forecast orders still remain in the plan. What has happened in Jenkins is that some of the forecast production allocation for orders that are anticipated has been switched to actual orders, but there are still forecast orders (i.e. orders which are anticipated, but don't yet have actual customer requests associated with them). The claim limitations of a forecast rule to estimate orders is met, because the rule allocation of Jenkins still provides for forecast orders in the plan.

For example, if a production planner has a forecast of 50 orders for a future week, and orders for 20 are received resulting in the planner allocating production to 10 Monday and 10 Tuesday, according to Jenkins the planner would still maintain the forecast of 30 remaining orders (Wed-Friday). In this case the forecast has been adjusted by a rule. Also, in the art of production planning it would be understood that such an operation would result in a production plan that is more accurate (i.e. if orders for 20 have already been received, the likelihood is that the forecast of 30 is more accurate than the original forecast of 50.)

Thus the rule of Jenkins is a forecast adjustment rule because it adjusts the forecast to account for actual orders because the orders in the schedule are still estimated based on that rule (i.e. the transition of forecast orders to be actual ones).

Art Unit: 3623

The applicant argues against the Official Notice that it is old and well known in the art to calculate a forecast hit rate, which corresponds to a forecast rule.

The examiner respectfully disagrees.

The limitation argued is the subject of Official Notice in combination with Jenkins. Support for the Official Notice can be found here. (The examiner also notes that the 1975 Meyer reference cited at the end of the previous office action supports the idea of using a threshold (i.e. a best fit calculation) to determine which model provides the best forecast, however Johnson below more explicitly ties this idea, known in the art of picking the best model or rule to use, into a manufacturing planning and scheduling context).

Supporting Quick Response Through Scheduling of Make-to-Stock Production/Inventory Systems

M. Eric Johnson, Gary Scudder, 1999, Decision Sciences

Volume 30 Issue 2, Pages 441 - 467

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1, 3-6, 13, 15-19 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenkins et al. (U.S. Pub No. 2002/0188499 A1) in view of

Supporting Quick Response Through Scheduling of Make-to-Stock

Production/Inventory Systems, M. Eric Johnson, Gary Scudder, 1999, Decision Sciences, Volume 30 Issue 2, Pages 441 – 467 (hereinafter **Johnson**).

Regarding to claim 1, Jenkins et al. discloses the invention substantially as claimed. Jenkins et al. discloses a computer implemented method of dynamic customer demand forecasting (paragraph [0002], lines 1-2), comprising using a computer (i.e. external system/web-client, see fig. 1b) to perform the steps of:

inputting at least one forecast rule (paragraph [0028], lines 1-4, paragraph [0029], lines 1-3); accumulating forecasted demand (paragraph [0030], lines 7-10), selecting a highest hit rate from the forecast hit rate; and designating the forecast rule corresponding to the highest hit rate as a target rule (paragraph [0034], lines 1-3, paragraph [0037], lines 1-7). Jenkins teaches using a database to store information for the data needed for the method steps (see para 19). However, Jenkins et al does not

Art Unit: 3623

explicitly disclose calculating at least one forecast hit rate, each of which corresponds to a forecast rule. It is common knowledge in the prior art (Official Notice) to calculate (i.e. accumulate) a forecast hit rate (i.e. orders) corresponding to a forecast rule when accumulating forecasted demand. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made for the method of Jenkins et al. to include to feature of calculating at least one forecast hit rate (i.e. orders), each of which corresponds to a forecast rule. The motivation for doing so would have been to adjust/modify the forecasted demand by selecting the highest hit rate as the target rule.

Regarding to claim 13, Jenkins et al. discloses the invention substantially as claimed. Jenkins et al. discloses a storage medium (i.e. external system/server, see fig. 1b) for storing a computer program providing a method of dynamic customer demand forecasting (paragraph [0002], lines 1-2), the method comprising the steps of: inputting at least one forecast rule (paragraph [0028], lines 1-4, paragraph [0029], lines 1-3); accumulating forecasted demand (paragraph [0030], lines 7-10); selecting a highest hit rate from the forecast hit rate; and designating the forecast rule corresponding to the highest hit rate as a target rule (paragraph [0034], lines 1-3, paragraph [0037], lines 1-7). However, Jenkins et al does not explicitly disclose calculating at least one forecast hit rate, each of which corresponds to a forecast rule. It is common knowledge in the prior art to calculate (i.e. accumulate) a forecast hit rate (i.e. orders) corresponding to a forecast rule when accumulating forecasted demand. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made for the storage medium of Jenkins et al. to include to feature of calculating at least one forecast

Art Unit: 3623

hit rate (i.e. orders), each of which corresponds to a forecast rule. The motivation for doing so would have been to adjust/modify the forecasted demand by selecting the highest hit rate as the target rule.

Regarding to claim 19, Jenkins et al. discloses the invention substantially as claimed. Jenkins discloses a system of dynamic customer demand forecasting (paragraph [0002], lines 1-2), comprising: an operation computer (i.e. external system/web client) (paragraph [0057], lines 1-5, see fig. 1b), inputting at least one forecast rule (paragraph [0028], lines 1-4, paragraph [0029], lines 1-3), accumulating forecasted demand (paragraph [0030], lines 7-10), selecting a highest hit rate from the forecast hit rate, and designating the forecast rule corresponding to the highest hit rate as a target rule (paragraph [0034], lines 1-3, paragraph [0037], lines 1-7); and at least one database, coupled to the operation computer, storing the forecast rule, the forecast hit rate, and the target rule (i.e. information for operation) (paragraph [0019], lines 1-3, paragraph [0028], lines 1-6). However, Jenkins et al does not explicitly disclose calculating at least one forecast hit rate, each of which corresponds to a forecast rule. It is common knowledge in the prior art to calculate (i.e. accumulate) a forecast hit rate (i.e. orders) corresponding to a forecast rule when accumulating forecasted demand. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made for the system of Jenkins et al. to include to feature of calculating at least one forecast hit rate (i.e. orders), each of which corresponds to a forecast rule. The motivation for doing so would have been to adjust/modify the forecasted demand by selecting the highest hit rate as the target rule.

Regarding to claims 3, 15 and 21, Jenkins et al. discloses wherein the forecast rule comprises a forecast base rule (i.e. forecast for the period) (paragraph [0029], lines 1-3) and at least one customer defined rule (i.e. input by customer orders) (paragraph [0031], lines 1-2).

Regarding to claims 4, 16 and 22 Jenkins et al. discloses integrating (i.e. supplement) the forecast base rule and the customer defined rule into the forecast rule (paragraph [0031], lines 1-2 and 6-8).

Regarding to claims 5, 17 and 23, Jenkins et al. discloses the invention substantially as claimed. Jenkins et al. discloses prorating the forecast by demand to date (paragraph [0030], lines 1-3) and setting the need date on which the first demand occurs (i.e. date of the first order) (paragraph [0048], lines 5-6). However, Jenkins et al. does not explicitly disclose wherein the forecast base rule is produced according to the most current order. It is common knowledge in the prior art to produce the forecast base rule according to the most current order when prorating the forecast by demand to date. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made for the computer implemented method, apparatus, storage medium and system of Jenkins et al. to include the feature of wherein the forecast base rule is produced according to the most current order. The motivation for doing so would have been to dynamically forecast demand and efficiently develop delivery capabilities of customer orders based on the most current orders.

Art Unit: 3623

Regarding to claims 6, 18 and 24, Jenkins et al. discloses wherein the forecast hit rate is calculated according to orders (i.e. customer orders) (paragraph [0031], lines 1-2 and 6-8, paragraph [0034], lines 1-3, paragraph [0037], lines 1-7).

6. Claim 2, 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenkins et al. (U.S. Pub No. 2002/0188499 A1) in view of Borders et al. (U.S. Pat. No. 7,139,721 B2).

Regarding to claims 2, 14 and 20, Jenkins et al. discloses the invention substantially as claimed. However, Jenkins et al. does not disclose providing the target rule to a capacity allocation model for capacity allocation. Borders et al. discloses providing customer order data (i.e. target rule) to determine an actual capacity allocation distribution. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the computer implemented method, apparatus, storage medium and system of Jenkins et al. with the feature of providing the target rule to a capacity allocation model for capacity allocation as taught by Borders et al., as both Jenkins et al. and Borders et al. are directed to a computer implemented method, apparatus, storage medium and system of dynamic customer demand forecasting. The motivation for doing so would have been to efficiently develop delivery capabilities of customer orders.

Art Unit: 3623

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Development of a high-level supply chain simulation model

S Jain, RW Workman, LM Collins, EC Ervin, R ... - Simulation Conference, 2001

Succeeding with ERP

D Hare, UK Muller - Manufacturing Engineer, 1999 - ieeexplore.ieee.org

Coordinating manufacturing and marketing in international firms

CH St. John, ST Young, JL Miller - Journal of World Business, 1999 – Elsevier.

Rule-based forecasting: Development and validation of an expert systems approach to combining time

F Collopy, JS Armstrong - Management Science, 1992 - jstor.org

The implementation of long-term forecasting strategies using a knowledge-based expert system.

MS Kandil, SM El-Debeiky, NE Hasanien - Electric Power Systems Research, 2001 – Elsevier.

A search decision rule for the aggregate scheduling problem

Art Unit: 3623

WH Taubert - Management Science, 1968 - jstor.org

HyFIS: adaptive neuro-fuzzy inference systems and their application to nonlinear dynamical systems

J Kim, N Kasabov - Neural Networks, 1999 – Elsevier

Neuro-fuzzy approach to forecast returns of scrapped products to recycling and remanufacturing

J Marx-Gomez, C Rautenstrauch, A ... - Knowledge-Based Systems, 2002 - Elsevier

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G Sterrett whose telephone number is 571-272-6881. The examiner can normally be reached on Monday - Friday (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3623

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jonathan G. Sterrett/
Primary Examiner, Art Unit 3623
8-29-09